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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,891	12/06/2000	Steven Teig	SPLX P0002	1036

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EXAMINER

DO, THUAN V

ART UNIT

PAPER NUMBER

2825

DATE MAILED 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,891

Applicant(s)

TEIG ET AL.

Examiner

Thuan Do

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-13, 43-64 and 88-96 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-13 and 58-64 is/are allowed.
- 6) ☒ Claim(s) 43-45, 48, 49, 52-57, 88 and 93-96 is/are rejected.
- 7) ☒ Claim(s) 46, 47, 50, 51 and 89-92 is/are objected to.
- 8) ☒ Claim(s) 1-3, 14-42 and 65-87 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1) ☐ Certified copies of the priority documents have been received.
2) ☐ Certified copies of the priority documents have been received in Application No. ____.
3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 12.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This final office action is in response to amendment entered on 04/30/2003. Claims 4-13,43-64,88-96 remain pending in the application. Claims 1-3,14-42,65-87 have been canceled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 43-45,48,49,52-57,88,93-96 are rejected under 35 U.S.C. 102(b) as being unpatentable over Rostoker et al., Pat. No. 5,973,376.

Regarding claim 43: Rostoker teaches a method comprising:

constructing a connection graph that models the topology of interconnect lines for connecting the circuit elements of the net (figure 6 display a graph for interconnect wires in circuit elements),

said connection graph having edges, each edge connecting two circuit elements of the net (col. 60, lines 1-9 for connection of edges using graph) , wherein at least one of the edges is at least partially diagonal (figure 8 for diagonal connection) ;

identifying a placement metric based on the connection graph (col. 14, lines 15-20).

Regarding claim 44: Rostoker teaches a method with calculation of length and edges and their combinations layout (col. 83, lines 20-33 using various combinations of edge line attribute elements in the cell net circuit) .

Regarding claim 45: Rostoker teaches a method with adding measurements (col. 56, lines 8-16 by adding connection lengths together) .

Regarding claim 48: Rostoker teaches a method with the combined length calculation provides an estimate of interconnect-line length needed to connect the circuit elements of the net (col. 56, lines 8-16 where the repeating process can provide the estimation the length until the total length completed).

Regarding claim 49: Rostoker teaches a method with placement cost (col. 86, lines 1-7).

Regarding claim 52: Rostoker teaches a method with 45 degrees (col. 81, lines 1-9).

Regarding claim 53: Rostoker teaches a method with 120 degrees (col. 17, lines 7-15).

Regarding claims 54,55: Rostoker teaches a method with pins of circuit module (col. 58, lines 22-34).

Regarding claim 56: Rostoker teaches a method with connection graph (figure 6) and a minimum spanning tree (col. 58, lines 60-67).

Regarding claim 57: Rostoker teaches a method with a Steiner tree (col. 59, lines 41-51).

Regarding claim 88: Rostoker teaches a method comprising:

a) identifying a connection graph that models the topology of interconnect lines for connecting the set of circuit elements, wherein said connection graph has a plurality of edges, wherein at least some of the edges are neither parallel nor orthogonal to each other (figure 8 teaches the connection graph from terminal points 1308, 1314 and 1310 where the line connections of 1308-1314 and 1314 and 1310 are neither parallel nor orthogonal to each other),

b) identifying a placement metric based on the connection graph (col. 14, lines 15-20).

Regarding claim 93: Rostoker teaches a method with neither parallel nor orthogonal is rejected as a portion of claim 88 recited above.

Regarding claim 94: Rostoker teaches a method with a 12 degree angle is a well know tolerance connection lines of claim 93 and rejected in the same manner.

Regarding claims 95,96: Rostoker teaches a method with spanning trees (col. 59, lines 17-33).

Response to Arguments

3. Applicant's arguments have been considered but they are not all persuasive .
- Applicant argues that Rostoker does not teach identifying a placement metric based on the connection graph with the at least one edge that is at least partially diagonal.

Rostoker teaches that feature as cited in claim 43 rejection.

Allowable Subject Matter

4. Claims 46-47,50,51,89-92 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for allowance of claims 46,47,50: The prior art of record fails to teach calculating the distance (D) or connection graph.

The reason for allowance of claim 51: The prior art of record fails to teach measurement of the length of at least one line that is at least partially diagonal.

The reason for allowance of claims 89-92: The prior art of record does not teach calculating length of the graph.

Allowable Subject Matter

5. Claims 4-13 and 58-64 are allowed.

The reason for allowance of claims 4-13: The prior art of record does not teach calculation the length of at least one line that is at least partial diagonal with all other features of the independent claim 4.

The reason for allowance of claims 58-64: The prior art of record fails to teach partially diagonal in combination with other features of independent claims.

CONTACT INFORMATION

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan Do whose telephone number is 703-305-2362. The examiner can normally be reached on Monday-Friday 8:30-5:30 (except 2nd Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 703-308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are 703305-3431 for regular communications and 703-305-3431 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0596.

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Thuan Do
Patent examiner
6/4/03


VUTHE SIEK
PRIMARY EXAMINER